STRUCTURE 25

This structure is a single barreled, corrugated metal pipe culvert, with discharge controlled by a slide gate. Operation of the gate is automatically controlled. The structure is located in the City of Miami at the N.E. 27th Avenue crossing of C-5, the Comfort Canal.

PURPOSE

This structure maintains optimum water control stages upstream in Canal 5 (Comfort Canal); it passes the design flood (once in ten years flood) without exceeding upstream flood design stage, and restricts downstream flood stages and discharge velocities to non-damaging levels; and it prevents saline intrusion during periods of high flood tides.

OPERATION

This structure will be automatically operated to maintain, as close as possible, the optimum headwater elevation of 2.0 feet. The gate will operate to maintain the optimum upstream water surface elevation as follow:

When the headwater elevation rises to 2.2 feet, the gate will open at six inches per minute;

When the headwater elevation rises or falls to 2.0 feet, the gate will become stationary;

When the headwater elevation falls to 1.8 feet, the gate will close at six inches per minute.

In addition to maintaining optimum upstream fresh water control, as described above, the automatic controls on this structure have an overriding control which closes the gates, regardless of the upstream water level, in the event of a high flood tide, whenever the differential between the head and the tailwater pool elevation reaches 0.2 feet.

In response to heavy rainfall, headwater elevation may be lowered until the storm has passed.

FLOOD DISCHARGE CHARACTERISTICS

	Design (Once in ten year flood)
Discharge Rate	100 c.f.s.
Headwater Elevation	1.8 feet
Tailwater Elevation	1.7 feet
Type Discharge	uncontrolled, free

DESCRIPTION OF STRUCTURE

Type: corrugated metal pipe culvert with upstream control

Number of barrels: one

Size of barrel: 96 inches

Length of barrel: 60 feet

Flow line elevation: -4.0 feet

Service bridge elevation: 5.5 feet

Gates

Number 1

Type: circular sluice gate mounted on upstream end of culvert

Size: 96 inch diameter

Control: automatic, on-site control with override differential water surface control sensed by bubbler system and remote computer control

Lifting Mechanism:

Normal power source: commercial electricity

Emergency power source: LP gas driven generator

Type of hoist: hydraulic cylinder directly connected to gate by gate stem activated by pump and electric motor.

ACCESS: Structure located at intersection of N.W. 11th Street and N.W. 27th Avenue in the city of Miami.

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level: Remote upstream and downstream digital recorders

Gate Position Recorder: Remote digital recorders

DEWATERING FACILITIES - None